





## Chris Field

Melvin and Joan Lane Professor of Interdisciplinary Environmental Studies, Director, Woods Institute for the Environment & Professor of Earth System Science, of Biology and Senior Fellow at the Woods Institute and at the Precourt Institute

 Curriculum Vitae available Online    Resume available Online

### Bio

---

#### BIO

Chris Field is the Perry L. McCarty Director of the Stanford Woods Institute for the Environment and the Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies at Stanford University.

Prior to his 2016 appointment at the Stanford Woods Institute, Field was a staff member at the Carnegie Institution for Science (1984-2002) and founding director of the Carnegie's Department of Global Ecology (2002-2016).

Field's research focuses on climate change, especially solutions that improve lives now, decrease the amount of future warming, and support vibrant economies. Recent projects emphasize decreasing risks from coastal flooding and wildfires. He has been deeply involved with national and international efforts to advance understanding of global ecology and climate change. Field was co-chair of Working Group II of the Intergovernmental Panel on Climate Change (IPCC) (2008-2015), where he led the effort on "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation" (2012), and "Climate Change 2014: Impacts, Adaptation, and Vulnerability(2014)". His widely cited work has earned many recognitions, including election to the US National Academy of Sciences and the American Academy of Arts and Sciences, the Max Planck Research Award, and the Roger Revelle Medal. Field is a member of the Board of Directors of World Wildlife Fund (US) and the Board of Trustees of the California Academy of Sciences. He is a fellow of the American Association for the Advancement of Science, the American Geophysical Union, and the Ecological Society of America.

He holds a bachelor's degree in biology from Harvard College and a Ph.D. in biology from Stanford.

#### ACADEMIC APPOINTMENTS

- Professor, Biology
- Professor, Earth System Science
- Professor, Biology
- Senior Fellow, Precourt Institute for Energy
- Perry L. McCarty Director, Stanford Woods Institute for the Environment

#### ADMINISTRATIVE APPOINTMENTS

- Perry L. McCarty Director, Stanford Woods Institute for the Environment, Stanford University, (2016- present)
- Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies, Stanford University, (2012- present)

- Professor, Department of Earth System Science, Stanford University, (2008- present)
- Senior Fellow, Woods Institute for the Environment, Stanford University, (2008- present)
- Professor, Department of Biology, Stanford University, (2005- present)
- Faculty Director Jasper Ridge Biological Preserve, Stanford University, (2005-2016)
- Director, Department of Global Ecology, Carnegie Institution, (2002-2016)
- Staff Scientist, Carnegie Institution of Washington, (1984-2002)
- Assistant Professor, Biology, University of Utah, (1981-1984)

## **HONORS AND AWARDS**

- Japan Prize, Japan Prize Foundation (2022)
- Member, American Philosophical Society (2022)
- Stephen H. Schneider Award for Outstanding Climate Science Communication, Climate One (2015)
- Roger Revelle Medal, American Geophysical Union (2014)
- BBVA Frontiers of Knowledge Award, BBVA Foundation (2013)
- Max Planck Research Prize, Max Planck Society (2013)
- Fellow, Ecological Society of America (2012)
- Member, American Academy of Arts and Sciences (2010)
- Fellow, American Association for the Advancement of Science (2009)
- Heinz Award, Heinz Group (2009)
- Member, US National Academy of Sciences (2001)
- ESA Aldo Leopold Fellow, ESA Aldo Leopold (2000)

## **BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS**

- Member, California Academy of Sciences Board of Trustees (2018 - present)
- Member, WWF US Board of Directors (2016 - present)
- Member, Harvard University Board of Overseers (2013 - 2019)
- Co-chair, WGII, Intergovernmental Panel on Climate Change (2008 - 2015)
- Member, NRC committee on energy externalities (2008 - 2009)
- Member, NRC comm on research opportunities at the interface of physics and biological sciences (2008 - 2009)
- Chair, NRC committee on ecological impacts of climate change (2008 - 2008)
- Chair, NEON Science, Technology, & Education Advisory Committee (2007 - 2013)
- Member, NRC Board on International Science Organizations (2006 - 2009)
- 2006 - 2008 | Co-chair, Stanford Environmental Venture Fund Panel, Stanford University (2006 - 2008)
- Member, SSC: Global Carbon Project (2006 - 2008)
- Chair, NEON ISEP revision committee (2006 - 2007)
- Coordinating Lead Author, IPCC, WG2 (2004 - 2007)
- Cluster Coordinator, SCOPE (2002 - 2005)
- Member, PNAS, Editorial Board (2000 - 2009)
- Chair, Advisory Comm., US Carbon Cycle Science Program (2000 - 2005)
- Chair, Advisory Committee, US Carbon Cycle Science Program (2000 - 2005)

- Member, NRC: Board on Environmental Studies and Toxicology (1999 - 2006)
- Member, NRC Grand Challenges in Environmental Biology (1998 - 2000)
- Member, NSF Ecosystem Studies Panel (1997 - 1999)
- Member, NRC Ecosystem Panel (1997 - 1999)
- Senior Editor, Global Change Biology (1994 - 1999)
- Chair, US National Committee for SCOPE (1993 - 1998)
- Member editorial board, Ecological Applications (1993 - 1996)
- Member, US National Committee for SCOPE (1991 - 1998)
- Chair, IGBP-BAHC focus 3: Large-scale processes (1991 - 1997)
- Editorial Review Board, Ecology (1991 - 1993)

## PROFESSIONAL EDUCATION

- PhD, Stanford University , Biological Sciences (1981)
- AB, Harvard College , Biology (1975)

## LINKS

- Stanford Woods Institute for the Environment: <https://woods.stanford.edu>
- Field Lab: <https://fieldlab.stanford.edu>

## Research & Scholarship

---

### CURRENT RESEARCH AND SCHOLARLY INTERESTS

#### Research

My field is climate-change science, and my research emphasizes human-ecological interactions across many disciplines. Most studies include aspects of ecology, but also aspects of law, sociology, medicine, or engineering. My colleagues and I develop diverse approaches to understanding climate change impacts, opportunities for adaptation, and the role of ecosystem processes in climate-change solutions. My lab has a long history of quantifying large-scale ecosystem processes, using satellites, atmospheric data, models, and census data. We explore global-scale patterns of vegetation-climate feedbacks, carbon cycle dynamics, primary production, forest management, and fire. Recent work on adaptation has emphasized strategic relocation and opportunities for strategies at the overlap of adaptation, mitigation, and economic development.

#### Teaching

Environmental Sustainability: Global Predicaments and Possible Solutions

Hacking for Climate and Sustainability

#### Professional Activities

Director, Stanford Woods Institute for the Environment

Board of Directors, World Wildlife Fund

Board of Trustees, California Academy of Sciences

## Teaching

---

### COURSES

2025-26

- Carbon Dioxide and Methane Removal, Utilization, and Sequestration: EARTHSYS 308, ENERGY 308, ENVRES 295, ESS 308, ME 308 (Aut)
- Climate Displacement, Migration, and Mobility: CSRE 234, EBS 234, ESS 234, HUMRTS 224 (Win)
- Environmental Sustainability: Global Predicaments and Possible Solutions: COLLEGE 106 (Spr)
- Innovation for Climate and Sustainability: EARTHSYS 213 (Win)
- Research Preparation for Undergraduates: ESS 108 (Spr)

#### **2024-25**

- Carbon Dioxide and Methane Removal, Utilization, and Sequestration: EARTHSYS 308, ENERGY 308, ENVRES 295, ESS 308, ME 308 (Aut)
- Climate Displacement, Migration, and Mobility: CSRE 234, ESS 234, HUMRTS 224 (Spr)
- Environmental Sustainability: Global Predicaments and Possible Solutions: COLLEGE 106 (Spr)
- Innovation for Climate and Sustainability: EARTHSYS 213 (Win)
- Research Preparation for Undergraduates: ESS 108 (Spr)

#### **2023-24**

- Carbon Dioxide and Methane Removal, Utilization, and Sequestration: EARTHSYS 308, ENERGY 308, ENVRES 295, ESS 308, ME 308 (Aut)
- Climate Displacement, Migration, and Mobility: ESS 234, HUMRTS 224 (Spr)
- Environmental Sustainability: Global Predicaments and Possible Solutions: COLLEGE 106 (Spr)
- Hacking for Climate and Sustainability: EARTHSYS 213 (Win)
- Research Preparation for Undergraduates: ESS 108 (Spr)

#### **2022-23**

- Carbon Dioxide and Methane Removal, Utilization, and Sequestration: EARTHSYS 308, ENERGY 308, ENVRES 295, ESS 308, ME 308 (Aut)
- Environmental Sustainability: Global Predicaments and Possible Solutions: COLLEGE 106 (Spr)
- Hacking for Climate and Sustainability: EARTHSYS 213 (Win)
- Research Preparation for Undergraduates: ESS 108 (Spr)

## **STANFORD ADVISEES**

### **Doctoral Dissertation Reader (AC)**

Karli Moore, Trent Robinett

### **Postdoctoral Faculty Sponsor**

Qiao Kang, Mengyu Liang, Eric Mayer, Ziqi Qin

### **Doctoral Dissertation Advisor (AC)**

Lydia Villa

### **Doctoral Dissertation Co-Advisor (AC)**

Anela Arifi, Rwaida Gharib, Leona Neftaliam

### **Master's Program Advisor**

Annabelle Choi

### **Doctoral (Program)**

Raven Alcott

## **GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS**

- Biology (School of Humanities and Sciences) (Phd Program)

## Publications

---

### PUBLICATIONS

- **Climate impacts of digital use supply chains** *Environmental Research: Climate*  
Shi, L., Brandt, A., Iancu, D., Mach, K. J., Field, C., Cho, M., Ng, M., Chey, K., Ram, N., Robinson, T., Reeves, B.  
2024; 3 (1)
- **Enabling pathways for sustainable livelihoods in planned relocation** *NATURE CLIMATE CHANGE*  
Bower, E. R. R., Badamkar, A., Wong-Parodi, G., Field, C. B. B.  
2023
- **Long-term elevated precipitation induces grassland soil carbon loss via microbe-plant-soil interplay.** *Global change biology*  
Wang, M., Sun, X., Cao, B., Chiariello, N. R., Docherty, K. M., Field, C. B., Gao, Q., Gutknecht, J. L., Guo, X., He, G., Hungate, B. A., Lei, J., Niboyet, et al  
2023
- **The magnitude and pace of photosynthetic recovery after wildfire in California ecosystems.** *Proceedings of the National Academy of Sciences of the United States of America*  
Hemes, K. S., Norlen, C. A., Wang, J. A., Goulden, M. L., Field, C. B.  
2023; 120 (15): e2201954120
- **Low-elevation conifers in California's Sierra Nevada are out of equilibrium with climate.** *PNAS nexus*  
Hill, A. P., Nolan, C. J., Hemes, K. S., Cambron, T. W., Field, C. B.  
2023; 2 (2): pgad004
- **Enhancing the review process in global environmental assessments: The case of the IPCC** *ENVIRONMENTAL SCIENCE & POLICY*  
Palutikof, J. P., Boulter, S. L., Field, C. B., Mach, K. J., Manning, M. R., Mastrandrea, M. D., Meyer, L., Minx, J. C., Pereira, J. J., Plattner, G., Ribeiro, S., Sokona, Y., Stadler, et al  
2023; 139: 118-129
- **Long-term nitrogen deposition enhances microbial capacities in soil carbon stabilization but reduces network complexity.** *Microbiome*  
Ma, X., Wang, T., Shi, Z., Chiariello, N. R., Docherty, K., Field, C. B., Gutknecht, J., Gao, Q., Gu, Y., Guo, X., Hungate, B. A., Lei, J., Niboyet, et al  
2022; 10 (1): 112
- **Atmospheric variability contributes to increasing wildfire weather but not as much as global warming.** *Proceedings of the National Academy of Sciences of the United States of America*  
Diffenbaugh, N. S., Konings, A. G., Field, C. B.  
2021; 118 (46)
- **Forest fires and climate-induced tree range shifts in the western US.** *Nature communications*  
Hill, A. P., Field, C. B.  
2021; 12 (1): 6583
- **The limiting factors and regulatory processes that control the environmental responses of C3, C3-C4 intermediate, and C4 photosynthesis.** *Oecologia*  
Johnson, J. E., Field, C. B., Berry, J. A.  
2021
- **Bob Scholes: Multifaceted scientist with a genius for synthesis.** *Proceedings of the National Academy of Sciences of the United States of America*  
Archibald, S., Field, C. B.  
2021; 118 (36)
- **An Ecosystem-Scale Flux Measurement Strategy to Assess Natural Climate Solutions.** *Environmental science & technology*  
Hemes, K. S., Runkle, B. R., Novick, K. A., Baldocchi, D. D., Field, C. B.  
2021
- **Long-term warming in a Mediterranean-type grassland affects soil bacterial functional potential but not bacterial taxonomic composition.** *NPJ biofilms and microbiomes*

- Gao, Y., Ding, J., Yuan, M., Chiariello, N., Docherty, K., Field, C., Gao, Q., Gu, B., Gutknecht, J., Hungate, B. A., Le Roux, X., Niboyet, A., Qi, et al  
2021; 7 (1): 17
- **Routing algorithms as tools for integrating social distancing with emergency evacuation.** *Scientific reports*  
Tsai, Y., Rastogi, C., Kitanidis, P. K., Field, C. B.  
2021; 11 (1): 19623
  - **Directions for Research on Climate and Conflict.** *Earth's future*  
Mach, K. J., Adger, W. N., Buhaug, H., Burke, M., Fearon, J. D., Field, C. B., Hendrix, C. S., Kraan, C. M., Maystadt, J., O'Loughlin, J., Roessler, P., Scheffran, J., Schultz, et al  
2020; 8 (7): e2020EF001532
  - **Landscape scale variation in the hydrologic niche of California coast redwood** *ECOGRAPHY*  
Francis, E. J., Asner, G. P., Mach, K. J., Field, C. B.  
2020
  - **Climate change and ecosystems: threats, opportunities and solutions.** *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*  
Malhi, Y., Franklin, J., Seddon, N., Solan, M., Turner, M. G., Field, C. B., Knowlton, N.  
2020; 375 (1794): 20190104
  - **Fire history and plant community composition outweigh decadal multi-factor global change as drivers of microbial composition in an annual grassland** *JOURNAL OF ECOLOGY*  
Qin, C., Zhu, K., Chiariello, N. R., Field, C. B., Peay, K. G.  
2020; 108 (2): 611–25
  - **Fire affects the taxonomic and functional composition of soil microbial communities, with cascading effects on grassland ecosystem functioning** *GLOBAL CHANGE BIOLOGY*  
Yang, S., Zheng, Q., Yang, Y., Yuan, M., Ma, X., Chiariello, N. R., Docherty, K. M., Field, C. B., Gutknecht, J. L. M., Hungate, B. A., Niboyet, A., Le Roux, X., Zhou, et al  
2020; 26 (2): 431–42
  - **Climate-driven risks to the climate mitigation potential of forests.** *Science (New York, N.Y.)*  
Anderegg, W. R., Trugman, A. T., Badgley, G. n., Anderson, C. M., Bartuska, A. n., Ciais, P. n., Cullenward, D. n., Field, C. B., Freeman, J. n., Goetz, S. J., Hicke, J. A., Huntzinger, D. n., Jackson, et al  
2020; 368 (6497)
  - **The future of bioenergy** *GLOBAL CHANGE BIOLOGY*  
Reid, W. V., Ali, M. K., Field, C. B.  
2020; 26 (1): 274–86
  - **Managed retreat through voluntary buyouts of flood-prone properties.** *Science advances*  
Mach, K. J., Kraan, C. M., Hino, M., Siders, A. R., Johnston, E. M., Field, C. B.  
2019; 5 (10): eaax8995
  - **Methane removal and atmospheric restoration** *NATURE SUSTAINABILITY*  
Jackson, R. B., Solomon, E. I., Canadell, J. G., Cargnello, M., Field, C. B.  
2019; 2 (6): 436–38
  - **Natural climate solutions are not enough.** *Science (New York, N.Y.)*  
Anderson, C. M., DeFries, R. S., Litterman, R., Matson, P. A., Nepstad, D. C., Pacala, S., Schlesinger, W. H., Shaw, M. R., Smith, P., Weber, C., Field, C. B.  
2019; 363 (6430): 933–34
  - **Strengthened scientific support for the Endangerment Finding for atmospheric greenhouse gases** *SCIENCE*  
Duffy, P. B., Field, C. B., Diefenbaugh, N. S., Doney, S. C., Dutton, Z., Goodman, S., Heinzerling, L., Hsiang, S., Lobell, D. B., Mickley, L. J., Myers, S., Natali, S. M., Parmesan, et al  
2019; 363 (6427): 597–+
  - **High-tide flooding disrupts local economic activity.** *Science advances*  
Hino, M., Belanger, S. T., Field, C. B., Davies, A. R., Mach, K. J.

2019; 5 (2): eaau2736

- **Long-term elevated CO2 shifts composition of soil microbial communities in a Californian annual grassland, reducing growth and N utilization potentials.** *The Science of the total environment*  
Yang, S. n., Zheng, Q. n., Yuan, M. n., Shi, Z. n., Chiariello, N. R., Docherty, K. M., Dong, S. n., Field, C. B., Gu, Y. n., Gutknecht, J. n., Hungate, B. A., Le Roux, X. n., Ma, et al  
2019; 652: 1474–81
- **Climate as a risk factor for armed conflict.** *Nature*  
Mach, K. J., Kraan, C. M., Adger, W. N., Buhaug, H. n., Burke, M. n., Fearon, J. D., Field, C. B., Hendrix, C. S., Maystadt, J. F., O'Loughlin, J. n., Roessler, P. n., Scheffran, J. n., Schultz, et al  
2019
- **Terrestrial Gross Primary Production: Using NIRV to Scale from Site to Globe.** *Global change biology*  
Badgley, G. n., Anderegg, L. D., Berry, J. A., Field, C. B.  
2019
- **Strengthened scientific support for the Endangerment Finding for atmospheric greenhouse gases.** *Science (New York, N.Y.)*  
Duffy, P. B., Field, C. B., Diffenbaugh, N. S., Doney, S. C., Dutton, Z., Goodman, S., Heinzerling, L., Hsiang, S., Lobell, D. B., Mickley, L. J., Myers, S., Natali, S. M., Parmesan, et al  
2018
- **Forest management in the Sierra Nevada provides limited carbon storage potential: an expert elicitation** *ECOSPHERE*  
Lalonde, S. J., Mach, K. J., Anderson, C. M., Francis, E. J., Sanchez, D. L., Stanton, C. Y., Turner, P. A., Field, C. B.  
2018; 9 (7)
- **Net-zero emissions energy systems** *SCIENCE*  
Davis, S. J., Lewis, N. S., Shaner, M., Aggarwal, S., Arent, D., Azevedo, I. L., Benson, S. M., Bradley, T., Brouwer, J., Chiang, Y., Clack, C. T. M., Cohen, A., Doig, et al  
2018; 360 (6396): 1419+
- **Unprecedented rates of land-use transformation in modelled climate change mitigation pathways** *NATURE SUSTAINABILITY*  
Turner, P. A., Field, C. B., Lobell, D. B., Sanchez, D. L., Mach, K. J.  
2018; 1 (5): 240–45
- **The global overlap of bioenergy and carbon sequestration potential** *CLIMATIC CHANGE*  
Turner, P. A., Mach, K. J., Lobell, D. B., Benson, S. M., Baik, E., Sanchez, D. L., Field, C. B.  
2018; 148 (1-2): 1–10
- **Managing cropland and rangeland for climate mitigation: an expert elicitation on soil carbon in California** *CLIMATIC CHANGE*  
Stanton, C. Y., Mach, K. J., Turner, P. A., Lalonde, S. J., Sanchez, D. L., Field, C. B.  
2018; 147 (3-4): 633–46
- **Decoupled dimensions of leaf economic and anti-herbivore defense strategies in a tropical canopy tree community** *OECOLOGIA*  
Chauvin, K., Asner, G. P., Martin, R. E., Kress, W. J., Wright, S. J., Field, C. B.  
2018; 186 (3): 765–82
- **Assessing Cumulative Effects of Climate Change Manipulations on Phosphorus Limitation in a Californian Grassland** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*  
Mellett, T., Selvin, C., Defforey, D., Roberts, K., Lecher, A. L., Dennis, K., Gutknecht, J., Field, C., Paytan, A.  
2018; 52 (1): 98–106
- **Geospatial analysis of near-term potential for carbon-negative bioenergy in the United States.** *Proceedings of the National Academy of Sciences of the United States of America*  
Baik, E. n., Sanchez, D. L., Turner, P. A., Mach, K. J., Field, C. B., Benson, S. M.  
2018; 115 (13): 3290–95
- **Forest offsets partner climate-change mitigation with conservation** *FRONTIERS IN ECOLOGY AND THE ENVIRONMENT*  
Anderson, C. M., Field, C. B., Mach, K. J.  
2017; 15 (7): 359–65

- **Rightsizing carbon dioxide removal.** *Science (New York, N.Y.)*  
Field, C. B., Mach, K. J.  
2017; 356 (6339): 706-707
- **Experimental fire increases soil carbon dioxide efflux in a grassland long-term multifactor global change experiment** *GLOBAL CHANGE BIOLOGY*  
Strong, A. L., Johnson, T. P., Chiariello, N. R., Field, C. B.  
2017; 23 (5): 1975-1987
- **Experimental fire increases soil carbon dioxide efflux in a grassland long-term multifactor global change experiment.** *Global change biology*  
Strong, A. L., Johnson, T. P., Chiariello, N. R., Field, C. B.  
2017; 23 (5): 1975-1987
- **Managed retreat as a response to natural hazard risk** *NATURE CLIMATE CHANGE*  
Hino, M., Field, C. B., Mach, K. J.  
2017; 7 (5): 364-?
- **Canopy near-infrared reflectance and terrestrial photosynthesis.** *Science advances*  
Badgley, G., Field, C. B., Berry, J. A.  
2017; 3 (3)
- **Toward the Next Generation of Assessment** *ANNUAL REVIEW OF ENVIRONMENT AND RESOURCES, VOL 42*  
Mach, K. J., Field, C. B.  
edited by Gadgil, A., Tomich, T. P.  
2017; 42: 569–97
- **Nonlinear, interacting responses to climate limit grassland production under global change** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Zhu, K., Chiariello, N. R., Tobeck, T., Fukami, T., Field, C. B.  
2016; 113 (38): 10589-10594
- **Mapping the climate change challenge** *NATURE CLIMATE CHANGE*  
Hallegatte, S., Rogelj, J., Allen, M., Clarke, L., Edenhofer, O., Field, C. B., Friedlingstein, P., van Kesteren, L., Knutti, R., Mach, K. J., Mastrandrea, M., Michel, A., Minx, et al  
2016; 6 (7): 663-668
- **Predicting the Responses of Soil Nitrite-Oxidizers to Multi-Factorial Global Change: A Trait-Based Approach** *FRONTIERS IN MICROBIOLOGY*  
Le Roux, X., Bouskill, N. J., Niboyet, A., Barthes, L., Dijkstra, P., Field, C. B., Hungate, B. A., Lerondelle, C., Pommier, T., Tang, J., Terada, A., Tourna, M., Poly, et al  
2016; 7
- **Colocation opportunities for large solar infrastructures and agriculture in drylands** *APPLIED ENERGY*  
Ravi, S., Macknick, J., Lobell, D., Field, C., Ganesan, K., Jain, R., Elchinger, M., Stoltenberg, B.  
2016; 165: 383-392
- **Building a sustained climate assessment process** *CLIMATIC CHANGE*  
Buizer, J. L., Dow, K., Black, M. E., Jacobs, K. L., Waple, A., Moss, R. H., Moser, S., Luers, A., Gustafson, D. I., RICHMOND, T. C., Hays, S. L., Field, C. B.  
2016; 135 (1): 23-37
- **Building a sustained climate assessment process** *CLIMATIC CHANGE*  
Buizer, J. L., Dow, K., Black, M. E., Jacobs, K. L., Waple, A., Moss, R. H., Moser, S., Luers, A., Gustafson, D. I., RICHMOND, T. C., Hays, S. L., Field, C. B.  
2016; 135 (1): 23-37
- **In-field yellow starthistle (*Centaurea solstitialis*) volatile composition under elevated temperature and CO<sub>2</sub> and implications for future control** *CHEMOECOLOGY*  
Oster, M., Beck, J. J., Furrow, R. E., Yeung, K., Field, C. B.  
2015; 25 (6): 313-323

- **Projections of future meteorological drought and wet periods in the Amazon** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Duffy, P. B., Brando, P., Asner, G. P., Field, C. B.  
2015; 112 (43): 13172-13177
- **Tree mortality predicted from drought-induced vascular damage** *NATURE GEOSCIENCE*  
Anderegg, W. R., Flint, A., Huang, C., Flint, L., Berry, J. A., Davis, F. W., Sperry, J. S., Field, C. B.  
2015; 8 (5): 367-371
- **Linking vegetation patterns to environmental gradients and human impacts in a mediterranean-type island ecosystem** *LANDSCAPE ECOLOGY*  
Dahlin, K. M., Asner, G. P., Field, C. B.  
2014; 29 (9): 1571-1585
- **Orientation behavior of predaceous ground beetle species in response to volatile emissions identified from yellow starthistle damaged by an invasive slug** *ARTHROPOD-PLANT INTERACTIONS*  
Oster, M., Smith, L., Beck, J. J., Howard, A., Field, C. B.  
2014; 8 (5): 429-437
- **Loss of whole-tree hydraulic conductance during severe drought and multi-year forest die-off** *OECOLOGIA*  
Anderegg, W. R., Anderegg, L. D., Berry, J. A., Field, C. B.  
2014; 175 (1): 11-23
- **Linking rainforest ecophysiology and microclimate through fusion of airborne LiDAR and hyperspectral imagery** *ECOSPHERE*  
Broadbent, E. N., Zambrano, A. M., Asner, G. P., Field, C. B., Rosenheim, B. E., Kennedy-Bowdoin, T., Knapp, D. E., Burke, D., Giardina, C., Cordell, S.  
2014; 5 (5)
- **Tradeoffs and Synergies between Biofuel Production and Large Solar Infrastructure in Deserts.** *Environmental science & technology*  
Ravi, S., Lobell, D. B., Field, C. B.  
2014; 48 (5): 3021-3030
- **Modeling the impact of carbon farming on land use in a New Zealand landscape** *ENVIRONMENTAL SCIENCE & POLICY*  
Funk, J. M., Field, C. B., Kerr, S., Daigneault, A.  
2014; 37: 1-10
- **Land-Use Efficiency of Big Solar** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*  
Hernandez, R. R., Hoffacker, M. K., Field, C. B.  
2014; 48 (2): 1315-1323
- **Integrating stand and soil properties to understand foliar nutrient dynamics during forest succession following slash-and-burn agriculture in the Bolivian Amazon.** *PloS one*  
Broadbent, E. N., Almeyda Zambrano, A. M., Asner, G. P., Soriano, M., Field, C. B., de Souza, H. R., Peña-Claros, M., Adams, R. I., Dirzo, R., Giles, L.  
2014; 9 (2)
- **Integrating Stand and Soil Properties to Understand Foliar Nutrient Dynamics during Forest Succession Following Slash-and-Burn Agriculture in the Bolivian Amazon.** *PloS one*  
Broadbent, E. N., Almeyda Zambrano, A. M., Asner, G. P., Soriano, M., Field, C. B., de Souza, H. R., Peña-Claros, M., Adams, R. I., Dirzo, R., Giles, L.  
2014; 9 (2): e86042
- **Changes in Ecologically Critical Terrestrial Climate Conditions** *SCIENCE*  
Diffenbaugh, N. S., Field, C. B.  
2013; 341 (6145): 486-492
- **Seasonal energy storage using bioenergy production from abandoned croplands** *ENVIRONMENTAL RESEARCH LETTERS*  
Campbell, J. E., Lobell, D. B., Genova, R. C., Zumkehr, A., Field, C. B.  
2013; 8 (3)
- **Risk management and climate change** *NATURE CLIMATE CHANGE*

- Kunreuther, H., Heal, G., Allen, M., Edenhofer, O., Field, C. B., Yohe, G.  
2013; 3 (5): 447-450
- **Environmental and community controls on plant canopy chemistry in a Mediterranean-type ecosystem.** *Proceedings of the National Academy of Sciences of the United States of America*  
Dahlin, K. M., Asner, G. P., Field, C. B.  
2013; 110 (17): 6895-6900
  - **Drought's legacy: multiyear hydraulic deterioration underlies widespread aspen forest die-off and portends increased future risk** *GLOBAL CHANGE BIOLOGY*  
Anderegg, W. R., Plavcova, L., Anderegg, L. D., Hacke, U. G., Berry, J. A., Field, C. B.  
2013; 19 (4): 1188-1196
  - **Simulated hydroclimatic impacts of projected Brazilian sugarcane expansion** *GEOPHYSICAL RESEARCH LETTERS*  
Georgescu, M., Lobell, D. B., Field, C. B., Mahalov, A.  
2013; 40 (5): 972-977
  - **Fostering advances in interdisciplinary climate science** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Shaman, J., Solomon, S., Colwell, R. R., Field, C. B.  
2013; 110: 3653-3656
  - **A dual isotope approach to isolate soil carbon pools of different turnover times** *BIOGEOSCIENCES*  
Torn, M. S., Kleber, M., Zavaleta, E. S., Zhu, B., Field, C. B., Trumbore, S. E.  
2013; 10 (12): 8067-8081
  - **Biophysical Properties of Cultivated Pastures in the Brazilian Savanna Biome: An Analysis in the Spatial-Temporal Domains Based on Ground and Satellite Data** *REMOTE SENSING*  
Ferreira, L. G., Fernandez, L. E., Sano, E. E., Field, C., Sousa, S. B., Arantes, A. E., Araujo, F. M.  
2013; 5 (1): 307-326
  - **Linking definitions, mechanisms, and modeling of drought-induced tree death** *TRENDS IN PLANT SCIENCE*  
Anderegg, W. R., Berry, J. A., Field, C. B.  
2012; 17 (12): 693-700
  - **Carnegie Airborne Observatory-2: Increasing science data dimensionality via high-fidelity multi-sensor fusion** *REMOTE SENSING OF ENVIRONMENT*  
Asner, G. P., Knapp, D. E., Boardman, J., Green, R. O., Kennedy-Bowdoin, T., Eastwood, M., Martin, R. E., Anderson, C., Field, C. B.  
2012; 124: 454-465
  - **Theoretical Impact of Changing Albedo on Precipitation at the Southernmost Boundary of the ITCZ in South America** *EARTH INTERACTIONS*  
Doughty, C. E., Loarie, S. R., Field, C. B.  
2012; 16
  - **Planetary Opportunities: A Social Contract for Global Change Science to Contribute to a Sustainable Future** *BIOSCIENCE*  
DeFries, R. S., Ellis, E. C., Chapin, F. S., Matson, P. A., Turner, B. L., Agrawal, A., Crutzen, P. J., Field, C., Gleick, P., Kareiva, P. M., Lambin, E., Liverman, D., Ostrom, et al  
2012; 62 (6): 603-606
  - **Harvesting Carbon from Eastern US Forests: Opportunities and Impacts of an Expanding Bioenergy Industry** *FORESTS*  
Davis, S. C., Dietze, M., DeLucia, E., Field, C., Hamburg, S. P., Loarie, S., Parton, W., Potts, M., Ramage, B., Wang, D., Youngs, H., Long, S. P.  
2012; 3 (2): 370-397
  - **The roles of hydraulic and carbon stress in a widespread climate-induced forest die-off** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Anderegg, W. R., Berry, J. A., Smith, D. D., Sperry, J. S., Anderegg, L. D., Field, C. B.  
2012; 109 (1): 233-237
  - **Environmental filtering and land-use history drive patterns in biomass accumulation in a mediterranean-type landscape** *ECOLOGICAL APPLICATIONS*

- Dahlin, K. M., Asner, G. P., Field, C. B.  
2012; 22 (1): 104-118
- **Effect of vineyard-scale climate variability on Pinot noir phenolic composition** *AGRICULTURAL AND FOREST METEOROLOGY*  
Nicholas, K. A., Matthews, M. A., Lobell, D. B., Willits, N. H., Field, C. B.  
2011; 151 (12): 1556-1567
  - **California perennial crops in a changing climate** *CLIMATIC CHANGE*  
Lobell, D. B., Field, C. B.  
2011; 109: 317-333
  - **Climate extremes in California agriculture** *CLIMATIC CHANGE*  
Lobell, D. B., Torney, A., Field, C. B.  
2011; 109: 355-363
  - **Native and Non-Native Community Assembly through Edaphic Manipulation: Implications for Habitat Creation and Restoration** *RESTORATION ECOLOGY*  
Bonebrake, T. C., Navratil, R. T., Boggs, C. L., Fendorf, S., Field, C. B., Ehrlich, P. R.  
2011; 19 (6): 709-716
  - **Strong response of an invasive plant species (*Centaurea solstitialis* L.) to global environmental changes** *ECOLOGICAL APPLICATIONS*  
Dukes, J. S., Chiariello, N. R., Loarie, S. R., Field, C. B.  
2011; 21 (6): 1887-1894
  - **Forest biomass allometry in global land surface models** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Wolf, A., Ciais, P., Bellassen, V., Delbart, N., Field, C. B., Berry, J. A.  
2011; 25
  - **Allometric growth and allocation in forests: a perspective from FLUXNET** *ECOLOGICAL APPLICATIONS*  
Wolf, A., Field, C. B., Berry, J. A.  
2011; 21 (5): 1546-1556
  - **Global Change Could Amplify Fire Effects on Soil Greenhouse Gas Emissions** *PLOS ONE*  
Niboyet, A., Brown, J. R., Dijkstra, P., Blankinship, J. C., Leadley, P. W., Le Roux, X., Barthes, L., Barnard, R. L., Field, C. B., Hungate, B. A.  
2011; 6 (6)
  - **Direct impacts on local climate of sugar-cane expansion in Brazil** *NATURE CLIMATE CHANGE*  
Loarie, S. R., Lobell, D. B., Asner, G. P., Mu, Q., Field, C. B.  
2011; 1 (2): 105-109
  - **Testing interactive effects of global environmental changes on soil nitrogen cycling** *ECOSPHERE*  
Niboyet, A., Le Roux, X., Dijkstra, P., Hungate, B. A., Barthes, L., Blankinship, J. C., Brown, J. R., Field, C. B., Leadley, P. W.  
2011; 2 (5)
  - **Direct climate effects of perennial bioenergy crops in the United States** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Georgescu, M., Lobell, D. B., Field, C. B.  
2011; 108 (11): 4307-4312
  - **Land-Cover and Surface Water Change Drive Large Albedo Increases in South America** *EARTH INTERACTIONS*  
Loarie, S. R., Lobell, D. B., Asner, G. P., Field, C. B.  
2011; 15
  - **Coordinated approaches to quantify long-term ecosystem dynamics in response to global change** *GLOBAL CHANGE BIOLOGY*  
Luo, Y., Melillo, J., Niu, S., Beier, C., Clark, J. S., Classen, A. T., Davidson, E., Dukes, J. S., Evans, R. D., Field, C. B., Czimczik, C. I., Keller, M., Kimball, et al  
2011; 17 (2): 843-854
  - **Agricultural net primary production in relation to that liberated by the extinction of Pleistocene mega-herbivores: an estimate of agricultural carrying capacity?** *ENVIRONMENTAL RESEARCH LETTERS*  
Doughty, C. E., Field, C. B.

2010; 5 (4)

- **Biophysical feedbacks between the Pleistocene megafauna extinction and climate: The first human-induced global warming?** *GEOPHYSICAL RESEARCH LETTERS*  
Doughty, C. E., Wolf, A., Field, C. B.  
2010; 37
- **Nutrient Limitations of Carbon Uptake: From Leaves to Landscapes in a California Rangeland Ecosystem** *RANGELAND ECOLOGY & MANAGEMENT*  
Houlton, B. Z., Field, C. B.  
2010; 63 (1): 120-127
- **The velocity of climate change** *NATURE*  
Loarie, S. R., Duffy, P. B., Hamilton, H., Asner, G. P., Field, C. B., Ackerly, D. D.  
2009; 462 (7276): 1052-U111
- **Potential impact of US biofuels on regional climate** *GEOPHYSICAL RESEARCH LETTERS*  
Georgescu, M., Lobell, D. B., Field, C. B.  
2009; 36
- **Boosted carbon emissions from Amazon deforestation** *GEOPHYSICAL RESEARCH LETTERS*  
Loarie, S. R., Asner, G. P., Field, C. B.  
2009; 36
- **Greater Transportation Energy and GHG Offsets from Bioelectricity Than Ethanol** *SCIENCE*  
Campbell, J. E., Lobell, D. B., Field, C. B.  
2009; 324 (5930): 1055-1057
- **Crop Yield Gaps: Their Importance, Magnitudes, and Causes** *ANNUAL REVIEW OF ENVIRONMENT AND RESOURCES*  
Lobell, D. B., Cassman, K. G., Field, C. B.  
2009; 34: 179-204
- **Responses of a California annual grassland to litter manipulation** *JOURNAL OF VEGETATION SCIENCE*  
Amatangelo, K. L., Dukes, J. S., Field, C. B.  
2008; 19 (5): 605-612
- **Protecting climate with forests** *ENVIRONMENTAL RESEARCH LETTERS*  
Jackson, R. B., Randerson, J. T., Canadell, J. G., Anderson, R. G., Avissar, R., Baldocchi, D. D., Bonan, G. B., Caldeira, K., Duffinbaugh, N. S., Field, C. B., Hungate, B. A., Jobbagy, E. G., Kueppers, et al  
2008; 3 (4)
- **Vulnerability of permafrost carbon to climate change: Implications for the global carbon cycle** *BIOSCIENCE*  
Schuur, E. A., Bockheim, J., Canadell, J. G., Euskirchen, E., Field, C. B., Goryachkin, S. V., Hagemann, S., Kuhry, P., Lafleur, P. M., Lee, H., Mazhitova, G., Nelson, F. E., Rinke, et al  
2008; 58 (8): 701-714
- **The global potential of bioenergy on abandoned agriculture lands** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*  
Campbell, J. E., Lobell, D. B., Genova, R. C., Field, C. B.  
2008; 42 (15): 5791-5794
- **Accentuation of phosphorus limitation in *Geranium dissectum* by nitrogen: an ecological genomics study** *GLOBAL CHANGE BIOLOGY*  
Thayer, S. S., St Clair, S. B., Field, C. B., Somerville, S. C.  
2008; 14 (8): 1877-1890
- **Changing feedbacks in the climate-biosphere system** *FRONTIERS IN ECOLOGY AND THE ENVIRONMENT*  
Chapin, F. S., Randerson, J. T., McGuire, A. D., Foley, J. A., Field, C. B.  
2008; 6 (6): 313-320
- **A unifying framework for dinitrogen fixation in the terrestrial biosphere** *NATURE*  
Houlton, B. Z., Wang, Y., Vitousek, P. M., Field, C. B.  
2008; 454 (7202): 327-U34

- **Litter decomposition in a California annual grassland: Interactions between photodegradation and litter layer thickness** *ECOSYSTEMS*  
Henry, H. A., Brizgys, K., Field, C. B.  
2008; 11 (4): 545-554
- **Energy assumptions were reasonable at the time, but not now** *NATURE*  
Field, C. B.  
2008; 453 (7192): 154-155
- **Biomass energy: the scale of the potential resource** *TRENDS IN ECOLOGY & EVOLUTION*  
Field, C. B., Campbell, J. E., Lobell, D. B.  
2008; 23 (2): 65-72
- **Estimation of the carbon dioxide (CO<sub>2</sub>) fertilization effect using growth rate anomalies of CO<sub>2</sub> and crop yields since 1961** *GLOBAL CHANGE BIOLOGY*  
Lobell, D. B., Field, C. B.  
2008; 14 (1): 39-45
- **Simulated global changes alter phosphorus demand in annual grassland** *GLOBAL CHANGE BIOLOGY*  
Menge, D. N., Field, C. B.  
2007; 13 (12): 2582-2591
- **Contributions to accelerating atmospheric CO<sub>2</sub> growth from economic activity, carbon intensity, and efficiency of natural sinks** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Canadell, J. G., Le Quere, C., Raupach, M. R., Field, C. B., Buitenhuis, E. T., Ciais, P., Conway, T. J., Gillett, N. P., Houghton, R. A., Marland, G.  
2007; 104 (47): 18866-18870
- **Global and regional drivers of accelerating CO<sub>2</sub> emissions** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Raupach, M. R., Marland, G., Ciais, P., Le Quere, C., Canadell, J. G., Klepper, G., Field, C. B.  
2007; 104 (24): 10288-10293
- **Environment. Tropical forests and climate policy.** *Science*  
Gullison, R. E., Frumhoff, P. C., Canadell, J. G., Field, C. B., Nepstad, D. C., Hayhoe, K., Avissar, R., Curran, L. M., Friedlingstein, P., Jones, C. D., Nobre, C.  
2007; 316 (5827): 985-986
- **Responses of temporal distribution of gastropods to individual and combined effects of elevated CO<sub>2</sub> and N deposition in annual grassland** *ACTA OECOLOGICA-INTERNATIONAL JOURNAL OF ECOLOGY*  
Peters, H. A., Hsu, G., Cleland, E. E., Chiariello, N. R., Mooney, H. A., Field, C. B.  
2007; 31 (3): 343-352
- **A model of biogeochemical cycles of carbon, nitrogen, and phosphorus including symbiotic nitrogen fixation and phosphatase production** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Wang, Y., Houlton, B. Z., Field, C. B.  
2007; 21 (1)
- **Historical effects of temperature and precipitation on California crop yields** *CLIMATIC CHANGE*  
Lobell, D. B., Cahill, K. N., Field, C. B.  
2007; 81 (2): 187-203
- **Feedbacks of terrestrial ecosystems to climate change** *ANNUAL REVIEW OF ENVIRONMENT AND RESOURCES*  
Field, C. B., Lobell, D. B., Peters, H. A., Chiariello, N. R.  
2007; 32: 1-29
- **Carnegie Airborne Observatory: in-flight fusion of hyperspectral imaging and waveform light detection and ranging (wLiDAR) for three-dimensional studies of ecosystems** *JOURNAL OF APPLIED REMOTE SENSING*  
Asner, G. P., Knapp, D. E., Kennedy-Bowdoin, T., Jones, M. O., Martin, R. E., Boardman, J., Field, C. B.  
2007; 1
- **North America** *Climate Change 2007: Impacts, Adaptation and Vulnerability*  
Field, C. B., Mortsch, L. D., Brklacich, M., Forbes, D. L., Kovacs, P., Patz, J. A., Running, S. W., Scott, M. J.

edited by Parry, O. F., Canziani, J. P., Palutikof, P. J., Linden, v. d., Hanson, C. E.  
Cambridge University Press, Cambridge.2007

- **The carbon cycle of North America in a global context** *The First State of the Carbon Cycle Report (SOCCR)-Synthesis and Assessment Product 2.2, Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. National Oceanic and Atmospheric Administration*  
Field, C. B., Sarmiento, J., Hales, B.  
edited by King, A. W., Dilling, L., Zimmerman, G. P., Fairman, D. M., Houghton, R. A., Marland, G., Rose, A. Z., Wilbanks, T. J.  
National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC..2007: 21–28
- **Modeling climate and climate change impacts on winegrape yields in california**  
Cahill, K. N., Lobell, D. B., Field, C. B., Bonfils, C., Hayhoe, K.  
AMER SOC ENOLOGY VITICULTURE.2007: 414A–414A
- **Global scale climate - crop yield relationships and the impacts of recent warming** *ENVIRONMENTAL RESEARCH LETTERS*  
Lobell, D. B., Field, C. B.  
2007; 2 (1)
- **Impacts of future climate change on California perennial crop yields: Model projections with climate and crop uncertainties** *AGRICULTURAL AND FOREST METEOROLOGY*  
Lobell, D. B., Field, C. B., Cahill, K. N., Bonfils, C.  
2006; 141 (2-4): 208-218
- **Interactive effects of fire, elevated carbon dioxide, nitrogen deposition, and precipitation on a California annual grassland** *ECOSYSTEMS*  
Henry, H. A., Chiariello, N. R., Vitousek, P. M., Mooney, H. A., Field, C. B.  
2006; 9 (7): 1066-1075
- **Carbon sequestration in California agriculture, 1980-2000** *ECOLOGICAL APPLICATIONS*  
Kroodsma, D. A., Field, C. B.  
2006; 16 (5): 1975-1985
- **Diverse responses of phenology to global changes in a grassland ecosystem** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Cleland, E. E., Chiariello, N. R., Loarie, S. R., Mooney, H. A., Field, C. B.  
2006; 103 (37): 13740-13744
- **Regression tools for CO2 inversions: application of a shrinkage estimator to process attribution** *TELLUS SERIES B-CHEMICAL AND PHYSICAL METEOROLOGY*  
Shaby, B. A., Field, C. B.  
2006; 58 (4): 279-292
- **Gastropod herbivory in response to elevated CO2 and N addition impacts plant community composition** *ECOLOGY*  
Cleland, E. E., Peters, H. A., Mooney, H. A., Field, C. B.  
2006; 87 (3): 686-694
- **The effects of elevated atmospheric CO2 on the amount and depth distribution of plant water uptake in a California annual grassland** *GLOBAL CHANGE BIOLOGY*  
Moore, L. A., Field, C. B.  
2006; 12 (3): 578-587
- **Is carbon within the global terrestrial biosphere becoming more oxidized? Implications for trends in atmospheric O-2** *GLOBAL CHANGE BIOLOGY*  
Randerson, J. T., Masiello, C. A., Still, C. J., Rahn, T., Poorter, H., Field, C. B.  
2006; 12 (2): 260-271
- **Herbivore control of annual grassland composition in current and future environments** *ECOLOGY LETTERS*  
Peters, H. A., Cleland, E. E., Mooney, H. A., Field, C. B.  
2006; 9 (1): 86-94
- **Responses of grassland production to single and multiple global environmental changes** *PLOS BIOLOGY*  
Dukes, J. S., Chiariello, N. R., Cleland, E. E., Moore, L. A., Shaw, M. R., Thayer, S., Tobeck, T., Mooney, H. A., Field, C. B.

2005; 3 (10): 1829-1837

- **Interactive effects of elevated CO<sub>2</sub>, N deposition and climate change on extracellular enzyme activity and soil density fractionation in a California annual grassland** *GLOBAL CHANGE BIOLOGY*  
Henry, H. A., Juarez, J. D., Field, C. B., Vitousek, P. M.  
2005; 11 (10): 1808-1815
- **A technique for identifying the roots of different species in mixed samples using nuclear ribosomal DNA** *JOURNAL OF VEGETATION SCIENCE*  
Moore, L. A., Field, C. B.  
2005; 16 (1): 131-134
- **Interactive effects of elevated CO<sub>2</sub>, N deposition and climate change on plant litter quality in a California annual grassland** *OECOLOGIA*  
Henry, H. A., Cleland, E. E., Field, C. B., Vitousek, P. M.  
2005; 142 (3): 465-473
- **Ammonia-oxidizing bacteria respond to multifactorial global change** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Horz, H. P., Barbrook, A., Field, C. B., Bohannan, B. J.  
2004; 101 (42): 15136-15141
- **Emissions pathways, climate change, and impacts on California** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Hayhoe, K., Cayan, D., Field, C. B., Frumhoff, P. C., Maurer, E. P., Miller, N. L., Moser, S. C., Schneider, S. H., Cahill, K. N., Cleland, E. E., Dale, L., Drapek, R., Hanemann, et al  
2004; 101 (34): 12422-12427
- **Progressive nitrogen limitation of ecosystem responses to rising atmospheric carbon dioxide** *BIOSCIENCE*  
Luo, Y., Su, B., Currie, W. S., Dukes, J. S., Finzi, A. C., Hartwig, U., Hungate, B., McMurtrie, R. E., Oren, R., Parton, W. J., Pataki, D. E., Shaw, M. R., Zak, et al  
2004; 54 (8): 731-739
- **The carbon balance of an old-growth forest: Building across approaches** *ECOSYSTEMS*  
Field, C. B., Kaduk, J.  
2004; 7 (5): 525-533
- **Atmospheric science. Nitrogen and climate change.** *Science*  
Hungate, B. A., Dukes, J. S., Shaw, M. R., Luo, Y., Field, C. B.  
2003; 302 (5650): 1512-1513
- **Diurnal centroid of ecosystem energy and carbon fluxes at FLUXNET sites** *JOURNAL OF GEOPHYSICAL RESEARCH-ATMOSPHERES*  
Wilson, K. B., Baldocchi, D., Falge, E., Aubinet, M., Berbigier, P., Bernhofer, C., Dolman, H., Field, C., Goldstein, A., Granier, A., Hollinger, D., Katul, G., Law, et al  
2003; 108 (D21)
- **Grassland responses to three years of elevated temperature, CO<sub>2</sub>, precipitation, and N deposition** *ECOLOGICAL MONOGRAPHS*  
Zavaleta, E. S., Shaw, M. R., Chiariello, N. R., Thomas, B. D., Cleland, E. E., Field, C. B., Mooney, H. A.  
2003; 73 (4): 585-604
- **Plants reverse warming effect on ecosystem water balance** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Zavaleta, E. S., Thomas, B. D., Chiariello, N. R., Asner, G. P., Shaw, M. R., Field, C. B.  
2003; 100 (17): 9892-9893
- **Postfire response of North American boreal forest net primary productivity analyzed with satellite observations** *GLOBAL CHANGE BIOLOGY*  
Hicke, J. A., Asner, G. P., Kasischke, E. S., French, N. H., Randerson, J. T., Collatz, G. J., Stocks, B. J., Tucker, C. J., Los, S. O., Field, C. B.  
2003; 9 (8): 1145-1157
- **Arbuscular mycorrhizae respond to plants exposed to elevated atmospheric CO<sub>2</sub> as a function of soil depth** *PLANT AND SOIL*  
Rillig, M. C., Field, C. B.

2003; 254 (2): 383-391

- **Additive effects of simulated climate changes, elevated CO<sub>2</sub>, and nitrogen deposition on grassland diversity** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Zavaleta, E. S., Shaw, M. R., Chiariello, N. R., Mooney, H. A., Field, C. B.  
2003; 100 (13): 7650-7654
- **Temporal evolution of the European forest sector carbon sink from 1950 to 1999** *GLOBAL CHANGE BIOLOGY*  
Nabuurs, G. J., Schelhaas, M. J., Mohren, G. M., Field, C. B.  
2003; 9 (2): 152-160
- **Environmental control of leaf area production: Implications for vegetation and land-surface modeling** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Cowling, S. A., Field, C. B.  
2003; 17 (1)
- **Element interactions and the cycles of life: An overview** *Conference on Element Interactions*  
Melillo, J. M., Field, C. B., MOLDAN, B.  
ISLAND PRESS.2003: 1-12
- **New frontiers in the study of element interactions** *Conference on Element Interactions*  
Ollinger, S., Sala, O., AGREN, G. I., Berg, B., Davidson, E., Field, C. B., Lerdau, M. T., Neff, J., Scholes, M., Sterner, R.  
ISLAND PRESS.2003: 63-91
- **Energy partitioning between latent and sensible heat flux during the warm season at FLUXNET sites** *WATER RESOURCES RESEARCH*  
Wilson, K. B., Baldocchi, D. D., Aubinet, M., Berbigier, P., Bernhofer, C., Dolman, H., Falge, E., Field, C., Goldstein, A., Granier, A., Grelle, A., Halldor, T., Hollinger, et al  
2002; 38 (12)
- **Grassland responses to global environmental changes suppressed by elevated CO<sub>2</sub>** *SCIENCE*  
Shaw, M. R., Zavaleta, E. S., Chiariello, N. R., Cleland, E. E., Mooney, H. A., Field, C. B.  
2002; 298 (5600): 1987-1990
- **Energy balance closure at FLUXNET sites** *1st FLUXNET Synthesis Workshop*  
Wilson, K., Goldstein, A., Falge, E., Aubinet, M., Baldocchi, D., Berbigier, P., Bernhofer, C., Ceulemans, R., Dolman, H., Field, C., Grelle, A., Ibrom, A., Law, et al  
ELSEVIER SCIENCE BV.2002: 223-43
- **Carbon emissions from tropical deforestation and regrowth based on satellite observations for the 1980s and 1990s** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
DeFries, R. S., Houghton, R. A., Hansen, M. C., Field, C. B., Skole, D., Townshend, J.  
2002; 99 (22): 14256-14261
- **Root production and demography in a california annual grassland under elevated atmospheric carbon dioxide** *GLOBAL CHANGE BIOLOGY*  
Higgins, P. A., Jackson, R. B., Des Rosiers, J. M., Field, C. B.  
2002; 8 (9): 841-850
- **Satellite estimates of productivity and light use efficiency in United States agriculture, 1982-98** *GLOBAL CHANGE BIOLOGY*  
Lobell, D. B., Hicke, J. A., Asner, G. P., Field, C. B., Tucker, C. J., Los, S. O.  
2002; 8 (8): 722-735
- **Forest carbon sinks in the Northern Hemisphere** *ECOLOGICAL APPLICATIONS*  
Goodale, C. L., Apps, M. J., Birdsey, R. A., Field, C. B., Heath, L. S., Houghton, R. A., Jenkins, J. C., Kohlmaier, G. H., Kurz, W., Liu, S. R., Nabuurs, G. J., Nilsson, S., Shvidenko, et al  
2002; 12 (3): 891-899
- **Satellite-derived increases in net primary productivity across North America, 1982-1998** *GEOPHYSICAL RESEARCH LETTERS*  
Hicke, J. A., Asner, G. P., Randerson, J. T., Tucker, C., Los, S., Birdsey, R., Jenkins, J. C., Field, C., Holland, E.  
2002; 29 (10)

- **Trends in North American net primary productivity derived from satellite observations, 1982-1998** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Hicke, J. A., Asner, G. P., Randerson, J. T., Tucker, C., Los, S., Birdsey, R., Jenkins, J. C., Field, C.  
2002; 16 (2)
- **Towards an ecological understanding of biological nitrogen fixation** *BIOGEOCHEMISTRY*  
Vitousek, P. M., Cassman, K., Cleveland, C., Crews, T., Field, C. B., Grimm, N. B., Howarth, R. W., Marino, R., Martinelli, L., Rastetter, E. B., SPRENT, J. I.  
2002; 57 (1): 1-45
- **Artificial climate warming positively affects arbuscular mycorrhizae but decreases soil aggregate water stability in an annual grassland** *OIKOS*  
Rillig, M. C., WRIGHT, S. F., Shaw, M. R., Field, C. B.  
2002; 97 (1): 52-58
- **Nitrogen controls on climate model evapotranspiration** *JOURNAL OF CLIMATE*  
Dickinson, R. E., Berry, J. A., Bonan, G. B., Collatz, G. J., Field, C. B., Fung, I. Y., Goulden, M., Hoffmann, W. A., Jackson, R. B., Myneni, R., Sellers, P. J., Shaikh, M.  
2002; 15 (3): 278-295
- **Global change - Sharing the garden** *SCIENCE*  
Field, C. B.  
2001; 294 (5551): 2490-2491
- **Recent patterns and mechanisms of carbon exchange by terrestrial ecosystems** *NATURE*  
Schimel, D. S., House, J. I., Hibbard, K. A., Bousquet, P., Ciais, P., Peylin, P., Braswell, B. H., Apps, M. J., Baker, D., Bondeau, A., Canadell, J., Churkina, G., Cramer, et al  
2001; 414 (6860): 169-172
- **Assessing photosynthetic downregulation in sunflower stands with an optically-based model.** *Photosynthesis research*  
Gamon, J. A., Field, C. B., Fredeen, A. L., Thayer, S.  
2001; 67 (1-2): 113-25
- **Consistent land- and atmosphere-based US carbon sink estimates** *SCIENCE*  
Pacala, S. W., Hurtt, G. C., Baker, D., Peylin, P., Houghton, R. A., Birdsey, R. A., Heath, L., Sundquist, E. T., Stallard, R. F., Ciais, P., Moorcroft, P., Caspersen, J. P., Shevliakova, et al  
2001; 292 (5525): 2316-2320
- **Resource optimization and symbiotic nitrogen fixation** *ECOSYSTEMS*  
Rastetter, E. B., Vitousek, P. M., Field, C., Shaver, G. R., Herbert, D., AGREN, G. I.  
2001; 4 (4): 369-388
- **Contrasting effects of elevated CO<sub>2</sub> on old and new soil carbon pools (vol 33, pg 365, 2001)** *SOIL BIOLOGY & BIOCHEMISTRY*  
Cardon, Z. G., Hungate, B. A., Cambardella, C. A., Chapin, F. S., Field, C. B., Holland, E. A., Mooney, H. A.  
2001; 33 (7-8): 1141-1141
- **Species-specific responses of plant communities to altered carbon and nutrient availability** *GLOBAL CHANGE BIOLOGY*  
Joel, G., Chapin, F. S., Chiariello, N. R., Thayer, S. S., Field, C. B.  
2001; 7 (4): 435-450
- **Biospheric primary production during an ENSO transition** *SCIENCE*  
Behrenfeld, M. J., Randerson, J. T., McClain, C. R., Feldman, G. C., Los, S. O., Tucker, C. J., Falkowski, P. G., Field, C. B., Frouin, R., Esaias, W. E., Kolber, D. D., Pollack, N. H.  
2001; 291 (5513): 2594-2597
- **Contrasting effects of elevated CO<sub>2</sub> on old and new soil carbon pools** *SOIL BIOLOGY & BIOCHEMISTRY*  
Cardon, Z. G., Hungate, B. A., Cambardella, C. A., Chapin, F. S., Field, C. B., Holland, E. A., Mooney, H. A.  
2001; 33 (3): 365-373
- **Nitrogen limitation of microbial decomposition in a grassland under elevated CO<sub>2</sub>** *NATURE*  
Hu, S., Chapin, F. S., Firestone, M. K., Field, C. B., Chiariello, N. R.

2001; 409 (6817): 188-191

- **Introduction. *Photosynthesis research***  
Berry, J. A., Field, C. B., Grossman, A. R.  
2001; 67 (1-2): 1-3
- **Common-pool resources and commons institutions - An overview of the applicability of the concept and approach to current environmental problems** *Symposium on Protecting the Commons - A Framework for Resource Management in the Americas*  
Burger, J., Field, C., Norgaard, R. B., Ostrom, E., Policansky, D.  
ISLAND PRESS.2001: 1-15
- **Assessing photosynthetic downregulation in sunflower stands with an optically-based model** *PHOTOSYNTHESIS RESEARCH*  
Gamon, J. A., Field, C. B., Fredeen, A. L., Thayer, S.  
2001; 67 (1-2): 113-125
- **Plant physiology of the "missing" carbon sink** *PLANT PHYSIOLOGY*  
Field, C. B.  
2001; 125 (1): 25-28
- **Soil microbiota in two annual grasslands: responses to elevated atmospheric CO<sub>2</sub>** *OECOLOGIA*  
Hungate, B. A., Jaeger, C. H., Gamara, G., Chapin, F. S., Field, C. B.  
2000; 124 (4): 589-598
- **Belowground consequences of vegetation change and their treatment in models** *ECOLOGICAL APPLICATIONS*  
Jackson, R. B., Schenk, H. J., Jobbagy, E. G., Canadell, J., Colello, G. D., Dickinson, R. E., Field, C. B., Friedlingstein, P., Heimann, M., Hibbard, K., Kicklighter, D. W., Kleidon, A., Neilson, et al  
2000; 10 (2): 470-483
- **Carbon metabolism of the terrestrial biosphere: A multitechnique approach for improved understanding** *ECOSYSTEMS*  
Canadell, J. G., Mooney, H. A., Baldocchi, D. D., Berry, J. A., Ehleringer, J. R., Field, C. B., Gower, S. T., Hollinger, D. Y., Hunt, J. E., Jackson, R. B., Running, S. W., Shaver, G. R., STEFFEN, et al  
2000; 3 (2): 115-130
- **Diverse mechanisms for CO<sub>2</sub> effects on grassland litter decomposition** *GLOBAL CHANGE BIOLOGY*  
Dukes, J. S., Field, C. B.  
2000; 6 (2): 145-154
- **Toward an allocation scheme for global terrestrial carbon models** *GLOBAL CHANGE BIOLOGY*  
Friedlingstein, P., Joel, G., Field, C. B., Fung, I. Y.  
1999; 5 (7): 755-770
- **Increases in early season ecosystem uptake explain recent changes in the seasonal cycle of atmospheric CO<sub>2</sub> at high northern latitudes** *GEOPHYSICAL RESEARCH LETTERS*  
Randerson, J. T., Field, C. B., Fung, I. Y., Tans, P. P.  
1999; 26 (17): 2765-2768
- **Quantifying the response of photosynthesis to changes in leaf nitrogen content and leaf mass per area in plants grown under atmospheric CO<sub>2</sub> enrichment** *PLANT CELL AND ENVIRONMENT*  
Peterson, A. G., Ball, J. T., Luo, Y., Field, C. B., Curtis, P. S., Griffin, K. L., Gunderson, C. A., Norby, R. J., Tissue, D. T., Forstreuter, M., Rey, A., Vogel, C. S.  
1999; 22 (9): 1109-1119
- **Combining satellite data and biogeochemical models to estimate global effects of human-induced land cover change on carbon emissions and primary productivity** *GLOBAL BIOGEOCHEMICAL CYCLES*  
DeFries, R. S., Field, C. B., Fung, I., Collatz, G. J., Bounoua, L.  
1999; 13 (3): 803-815
- **Ecosystem constraints to symbiotic nitrogen fixers: a simple model and its implications** *BIOGEOCHEMISTRY*  
Vitousek, P. M., Field, C. B.  
1999; 46 (1-3): 179-202

- **Linking C-13-based estimates of land and ocean sinks with predictions of carbon storage from CO<sub>2</sub> fertilization of plant growth** *TELLUS SERIES B-CHEMICAL AND PHYSICAL METEOROLOGY*  
Randerson, J. T., Thompson, M. V., Field, C. B.  
1999; 51 (3): 668-678
- **Fungal root colonization responses in natural grasslands after long-term exposure to elevated atmospheric CO<sub>2</sub>** *GLOBAL CHANGE BIOLOGY*  
Rillig, M. C., Field, C. B., Allen, M. F.  
1999; 5 (5): 577-585
- **Soil biota responses to long-term atmospheric CO<sub>2</sub> enrichment in two California annual grasslands** *OECOLOGIA*  
Rillig, M. C., Field, C. B., Allen, M. F.  
1999; 119 (4): 572-577
- **Revisiting the commons: local lessons, global challenges.** *Science*  
Ostrom, E., Burger, J., Field, C. B., Norgaard, R. B., Policansky, D.  
1999; 284 (5412): 278-282
- **Sustainability - Revisiting the commons: Local lessons, global challenges** *SCIENCE*  
Ostrom, E., Burger, J., Field, C. B., Norgaard, R. B., Policansky, D.  
1999; 284 (5412): 278-282
- **The effects of chamber pressurization on soil-surface CO<sub>2</sub> flux and the implications for NEE measurements under elevated CO<sub>2</sub>** *GLOBAL CHANGE BIOLOGY*  
Lund, C. P., Riley, W. J., Pierce, L. L., Field, C. B.  
1999; 5 (3): 269-281
- **The photosynthesis leaf nitrogen relationship at ambient and elevated atmospheric carbon dioxide: a meta-analysis** *GLOBAL CHANGE BIOLOGY*  
Peterson, A. G., Ball, J. T., Luo, Y. Q., Field, C. B., Reich, P. B., Curtis, P. S., Griffin, K. L., Gunderson, C. A., Norby, R. J., Tissue, D. T., Forstreuter, M., Rey, A., Vogel, et al  
1999; 5 (3): 331-346
- **Interactions between vegetation and climate: Radiative and physiological effects of doubled atmospheric CO<sub>2</sub>** *JOURNAL OF CLIMATE*  
Bounoua, L., Collatz, G. J., Sellers, P. J., Randall, D. A., Dazlich, D. A., Los, S. O., Berry, J. A., Fung, I., Tucker, C. J., Field, C. B., Jensen, T. G.  
1999; 12 (2): 309-324
- **Influence of fertilization and atmospheric CO<sub>2</sub> enrichment on ecosystem CO<sub>2</sub> and H<sub>2</sub>O exchanges in single- and multiple-species grassland microcosms** *ENVIRONMENTAL AND EXPERIMENTAL BOTANY*  
Fredeen, A. L., Koch, G. W., Field, C. B.  
1998; 40 (2): 147-157
- **Primary production of the biosphere: Integrating terrestrial and oceanic components** *SCIENCE*  
Field, C. B., Behrenfeld, M. J., Randerson, J. T., Falkowski, P.  
1998; 281 (5374): 237-240
- **Primary production of the biosphere: integrating terrestrial and oceanic components** *Science (New York, N.Y.)*  
Field, C. B., Behrenfeld, M. J., Randerson, J. T., Falkowski, P.  
1998; 281 (5374): 237-40
- **The terrestrial carbon cycle: Implications for the Kyoto Protocol** *SCIENCE*  
STEFFEN, W., Noble, I., Canadell, J., Apps, M., Schulze, E. D., Jarvis, P. G., Baldocchi, D., Ciais, P., Cramer, W., Ehleringer, J., Farquhar, G., Field, C. B., Ghazi, et al  
1998; 280 (5368): 1393-1394
- **Arbuscular mycorrhizal percent root infection and infection intensity of *Bromus hordeaceus* grown in elevated atmospheric CO<sub>2</sub>** *MYCOLOGIA*  
Rillig, M. C., Allen, M. F., Klironomos, J. N., Field, C. B.  
1998; 90 (2): 199-205
- **Mangrove biodiversity and ecosystem function** *International Workshop on Biodiversity and Ecosystem Function in Marine Ecosystems*

Field, C. B., Osborn, J. G., Hoffmann, L. L., Polsenberg, J. F., Ackerly, D. D., Berry, J. A., Bjorkman, O., Held, Z., Matson, P. A., Mooney, H. A.  
WILEY-BLACKWELL PUBLISHING, INC.1998: 3–14

- **and nutrients.** *Oecologia*  
Rillig, M. C., Allen, M. F., Klironomos, J. N., Chiariello, N. R., Field, C. B.  
1998; 113 (2): 252-259
- **Plant species-specific changes in root-inhabiting fungi in a California annual grassland: responses to elevated CO<sub>2</sub> and nutrients** *OECOLOGIA*  
Rillig, M. C., Allen, M. F., Klironomos, J. N., Chiariello, N. R., Field, C. B.  
1998; 113 (2): 252-259
- **Disproportional increases in photosynthesis and plant biomass in a Californian grassland exposed to elevated CO<sub>2</sub>: a simulation analysis** *FUNCTIONAL ECOLOGY*  
Luo, Y., Chen, J. L., Reynolds, J. F., Field, C. B., Mooney, H. A.  
1997; 11 (6): 696-704
- **The contribution of terrestrial sources and sinks to trends in the seasonal cycle of atmospheric carbon dioxide** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Randerson, J. T., Thompson, M. V., Conway, T. J., Fung, I. Y., Field, C. B.  
1997; 11 (4): 535-560
- **Carbon 13 exchanges between the atmosphere and biosphere** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Fung, I., Field, C. B., Berry, J. A., Thompson, M. V., Randerson, J. T., Malmstrom, C. M., Vitousek, P. M., Collatz, G. J., Sellers, P. J., Randall, D. A., Denning, A. S., Badeck, F., John, et al  
1997; 11 (4): 507-533
- **Production efficiency in sunflower: The role of water and nitrogen stress** *REMOTE SENSING OF ENVIRONMENT*  
Joel, G., Gamon, J. A., Field, C. B.  
1997; 62 (2): 176-188
- **Elevated atmospheric CO<sub>2</sub> increases water availability in a water-limited grassland ecosystem** *JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION*  
Fredeen, A. L., Randerson, J. T., Holbrook, N. M., Field, C. B.  
1997; 33 (5): 1033-1039
- **Assessing photosynthetic radiation-use efficiency of emergent aquatic vegetation from spectral reflectance** *AQUATIC BOTANY*  
Penuelas, J., Filella, I., Gamon, J. A., Field, C.  
1997; 58 (3-4): 307-315
- **Interannual variation in global-scale net primary production: Testing model estimates** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Malmstrom, C. M., Thompson, M. V., Juday, G. P., Los, S. O., Randerson, J. T., Field, C. B.  
1997; 11 (3): 367-392
- **The fate of carbon in grasslands under carbon dioxide enrichment** *NATURE*  
Hungate, B. A., Holland, E. A., Jackson, R. B., Chapin, F. S., Mooney, H. A., Field, C. B.  
1997; 388 (6642): 576-579
- **CO<sub>2</sub> effects on the water budget of grassland microcosm communities** *GLOBAL CHANGE BIOLOGY*  
Field, C. B., Lund, C. P., Chiariello, N. R., Mortimer, B. E.  
1997; 3 (3): 197-206
- **Decomposition of litter produced under elevated CO<sub>2</sub>: Dependence on plant species and nutrient supply** *BIOGEOCHEMISTRY*  
Franck, V. M., Hungate, B. A., Chapin, F. S., Field, C. B.  
1997; 36 (3): 223-237
- **Virus-induced differences in the response of oat plants to elevated carbon dioxide** *PLANT CELL AND ENVIRONMENT*  
Malmstrom, C. M., Field, C. B.  
1997; 20 (2): 178-188
- **Modeling the Exchanges of Energy, Water, and Carbon Between Continents and the Atmosphere** *Science (New York, N.Y.)*

Sellers, P. J., Dickinson, R. E., Randall, D. A., Betts, A. K., Hall, F. G., Berry, J. A., Collatz, G. J., Denning, A. S., Mooney, H. A., Nobre, C. A., Sato, N., Field, C. B., Henderson-Sellers, et al  
1997; 275 (5299): 502-9

- **Modeling the exchanges of energy, water, and carbon between continents and the atmosphere** *SCIENCE*  
Sellers, P. J., Dickinson, R. E., Randall, D. A., Betts, A. K., Hall, F. G., Berry, J. A., Collatz, G. J., Denning, A. S., Mooney, H. A., Nobre, C. A., Sato, N., Field, C. B., Henderson-Sellers, et al  
1997; 275 (5299): 502-509
- **Adapting GePSi (generic plant simulator) for modeling studies in the Jasper Ridge CO2 project** *ECOLOGICAL MODELLING*  
Luo, Y., Field, C. B., Mooney, H. A.  
1997; 94 (1): 81-88
- **Stimulation of grassland nitrogen cycling under carbon dioxide enrichment** *OECOLOGIA*  
Hungate, B. A., Chapin, F. S., Zhong, H., Holland, E. A., Field, C. B.  
1997; 109 (1): 149-153
- **Substrate limitations for heterotrophs: Implications for models that estimate the seasonal cycle of atmospheric CO2** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Randerson, J. T., Thompson, M. V., Malmstrom, C. M., Field, C. B., Fung, I. Y.  
1996; 10 (4): 585-602
- **Change in net primary production and heterotrophic respiration: How much is necessary to sustain the terrestrial carbon sink?** *1st Science Conference of the Global Analysis, Interpretation and Modelling Task Force*  
Thompson, M. V., Randerson, J. T., Malmstrom, C. M., Field, C. B.  
AMER GEOPHYSICAL UNION.1996: 711-26
- **Elevated CO2 increases belowground respiration in California grasslands** *OECOLOGIA*  
Luo, Y. Q., Jackson, R. B., Field, C. B., Mooney, H. A.  
1996; 108 (1): 130-137
- **increases belowground respiration in California grasslands.** *Oecologia*  
Luo, Y., Jackson, R. B., Field, C. B., Mooney, H. A.  
1996; 108 (1): 130-137
- **Effects of CO2 and nutrient enrichment on tissue quality of two California annuals** *OECOLOGIA*  
Chu, C. C., Field, C. B., Mooney, H. A.  
1996; 107 (4): 433-440
- **and nutrient enrichment on tissue quality of two California annuals.** *Oecologia*  
Chu, C. C., Field, C. B., Mooney, H. A.  
1996; 107 (4): 433-440
- **VEMAP: Model shootout at the sub-continental corral** *TRENDS IN ECOLOGY & EVOLUTION*  
Field, C. B., Ruimy, A., Luo, Y. Q., Malmstrom, C. M., Randerson, J. T., Thompson, M. V.  
1996; 11 (8): 313-314
- **The use of CO2 flux measurements in models of the global terrestrial carbon budget** *GLOBAL CHANGE BIOLOGY*  
Ruimy, A., Kergoat, L., Field, C. B., Saugier, B.  
1996; 2 (3): 287-296
- **A revised land surface parameterization (SiB2) for atmospheric GCMs .1. Model formulation** *JOURNAL OF CLIMATE*  
Sellers, P. J., Randall, D. A., Collatz, G. J., Berry, J. A., Field, C. B., Dazlich, D. A., Zhang, C., Collelo, G. D., Bounoua, L.  
1996; 9 (4): 676-705
- **Comparison of radiative and physiological effects of doubled atmospheric CO2 on climate** *SCIENCE*  
Sellers, P. J., Bounoua, L., Collatz, G. J., Randall, D. A., Dazlich, D. A., Los, S. O., Berry, J. A., Fung, I., Tucker, C. J., Field, C. B., Jensen, T. G.  
1996; 271 (5254): 1402-1406
- **Detecting changes in soil carbon in CO2 enrichment experiments** *International GCTE Workshop on Plant-Soil Carbon Below Ground: The Effects of Elevated Carbon Dioxide*

Hungate, B. A., Jackson, R. B., Field, C. B., Chapin, F. S.  
 SPRINGER.1996: 135–45

- **NEGATIVE XYLEM PRESSURES IN PLANTS - A TEST OF THE BALANCING PRESSURE TECHNIQUE** *SCIENCE*  
 Holbrook, N. M., Burns, M. J., Field, C. B.  
 1995; 270 (5239): 1193-1194
- **MAPPING THE LAND-SURFACE FOR GLOBAL ATMOSPHERE-BIOSPHERE MODELS - TOWARD CONTINUOUS DISTRIBUTIONS OF VEGETATIONS FUNCTIONAL-PROPERTIES** *JOURNAL OF GEOPHYSICAL RESEARCH-ATMOSPHERES*  
 DeFries, R. S., Field, C. B., Fung, I., Justice, C. O., Los, S., Matson, P. A., Matthews, E., Mooney, H. A., Potter, C. S., Prentice, K., Sellers, P. J., Townshend, J. R., Tucker, et al  
 1995; 100 (D10): 20867-20882
- **STOMATAL RESPONSES TO INCREASED CO<sub>2</sub> - IMPLICATIONS FROM THE PLANT TO THE GLOBAL-SCALE** *PLANT CELL AND ENVIRONMENT*  
 Field, C. B., Jackson, R. B., Mooney, H. A.  
 1995; 18 (10): 1214-1225
- **ECOSYSTEM GAS-EXCHANGE IN A CALIFORNIA GRASSLAND - SEASONAL PATTERNS AND IMPLICATIONS FOR SCALING** *ECOLOGY*  
 Valentini, R., Gamon, J. A., Field, C. B.  
 1995; 76 (6): 1940-1952
- **Effects of atmospheric CO<sub>2</sub> enrichment on ecosystem CO<sub>2</sub> exchange in a nutrient and water limited grassland** *1st Global Change and Terrestrial Ecosystems Science Conference*  
 Fredeen, A. L., Koch, G. W., Field, C. B.  
 WILEY-BLACKWELL PUBLISHING, INC.1995: 215–19
- **Photosynthesis, growth and density for the dominant species in a CO<sub>2</sub>-enriched grassland** *1st Global Change and Terrestrial Ecosystems Science Conference*  
 Jackson, R. B., Luo, Y., Cardon, Z. G., Sala, O. E., Field, C. B., Mooney, H. A.  
 WILEY-BLACKWELL PUBLISHING, INC.1995: 221–25
- **CONTRASTING LEAF AND ECOSYSTEM CO<sub>2</sub> AND H<sub>2</sub>O EXCHANGE IN AVENA-FATUA MONOCULTURE - GROWTH AT AMBIENT AND ELEVATED CO<sub>2</sub>** *PHOTOSYNTHESIS RESEARCH*  
 Fredeen, A. L., Field, C. B.  
 1995; 43 (3): 263-271
- **RELATIONSHIPS BETWEEN NDVI, CANOPY STRUCTURE, AND PHOTOSYNTHESIS IN 3 CALIFORNIAN VEGETATION TYPES** *ECOLOGICAL APPLICATIONS*  
 Gamon, J. A., Field, C. B., Goulden, M. L., Griffin, K. L., Hartley, A. E., Joel, G., Penuelas, J., Valentini, R.  
 1995; 5 (1): 28-41
- **GLOBAL NET PRIMARY PRODUCTION - COMBINING ECOLOGY AND REMOTE-SENSING** *ISLSCP (International Satellite Land Surface Climatology Project) Workshop*  
 Field, C. B., Randerson, J. T., Malmstrom, C. M.  
 ELSEVIER SCIENCE INC.1995: 74–88
- **REMOTE-SENSING OF THE LAND-SURFACE FOR STUDIES OF GLOBAL CHANGE - MODELS, ALGORITHMS, EXPERIMENTS** *REMOTE SENSING OF ENVIRONMENT*  
 Sellers, P. J., Meeson, B. W., Hall, F. G., Asrar, G., Murphy, R. E., Schiffer, R. A., BREHERTON, F. P., Dickinson, R. E., Ellingson, R. G., Field, C. B., Huemmrich, K. F., Justice, C. O., Melack, et al  
 1995; 51 (1): 3-26
- **PREDICTING RESPONSES OF PHOTOSYNTHESIS AND ROOT FRACTION TO ELEVATED [CO<sub>2</sub>](A) - INTERACTIONS AMONG CARBON, NITROGEN, AND GROWTH** *PLANT CELL AND ENVIRONMENT*  
 Luo, Y., Field, C. B., Mooney, H. A.  
 1994; 17 (11): 1195-1204
- **CO<sub>2</sub> ALTERS WATER-USE, CARBON GAIN, AND YIELD FOR THE DOMINANT SPECIES IN A NATURAL GRASSLAND** *OECOLOGIA*  
 Jackson, R. B., Sala, O. E., Field, C. B., Mooney, H. A.  
 1994; 98 (3-4): 257-262

- **CO<sub>2</sub> alters water use, carbon gain, and yield for the dominant species in a natural grassland.** *Oecologia*  
Jackson, R. B., Sala, O. E., Field, C. B., Mooney, H. A.  
1994; 98 (3-4): 257-262
- **REFLECTANCE INDEXES ASSOCIATED WITH PHYSIOLOGICAL-CHANGES IN NITROGEN-LIMITED AND WATER-LIMITED SUNFLOWER LEAVES** *REMOTE SENSING OF ENVIRONMENT*  
Penuelas, J., Gamon, J. A., Fredeen, A. L., Merino, J., Field, C. B.  
1994; 48 (2): 135-146
- **3 METHODS FOR MONITORING THE GAS-EXCHANGE OF INDIVIDUAL TREE CANOPIES - VENTILATED-CHAMBER, SAP-FLOW AND PENMAN-MONTEITH MEASUREMENTS ON EVERGREEN OAKS** *FUNCTIONAL ECOLOGY*  
Goulden, M. L., Field, C. B.  
1994; 8 (1): 125-135
- **TERRESTRIAL ECOSYSTEM PRODUCTION - A PROCESS MODEL-BASED ON GLOBAL SATELLITE AND SURFACE DATA** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Potter, C. S., Randerson, J. T., Field, C. B., Matson, P. A., Vitousek, P. M., Mooney, H. A., Klooster, S. A.  
1993; 7 (4): 811-841
- **ASSESSING COMMUNITY TYPE, PLANT BIOMASS, PIGMENT COMPOSITION, AND PHOTOSYNTHETIC EFFICIENCY OF AQUATIC VEGETATION FROM SPECTRAL REFLECTANCE** *REMOTE SENSING OF ENVIRONMENT*  
Penuelas, J., Gamon, J. A., Griffin, K. L., Field, C. B.  
1993; 46 (2): 110-118
- **PATTERNS OF STEM PHOTOSYNTHESIS IN 2 INVASIVE LEGUMES (SPARTIUM-JUNCEUM, CYTISUS-SCOPARIUS) OF THE CALIFORNIA COASTAL REGION** *AMERICAN JOURNAL OF BOTANY*  
Nielsen, E. T., KARPA, D., Mooney, H. A., Field, C.  
1993; 80 (10): 1126-1136
- **FUNCTIONAL PATTERNS IN AN ANNUAL GRASSLAND DURING AN AVIRIS OVERFLIGHT** *REMOTE SENSING OF ENVIRONMENT*  
Gamon, J. A., Field, C. B., Roberts, D. A., Ustin, S. L., Valentini, R.  
1993; 44 (2-3): 239-253
- **ENVIRONMENTAL-EFFECTS OF CIRCADIAN-RHYTHMS IN PHOTOSYNTHESIS AND STOMATAL OPENING** *PLANTA*  
HENNESSEY, T. L., FREEDEN, A. L., Field, C. B.  
1993; 189 (3): 369-376
- **CANOPY REFLECTANCE, PHOTOSYNTHESIS, AND TRANSPIRATION .3. A REANALYSIS USING IMPROVED LEAF MODELS AND A NEW CANOPY INTEGRATION SCHEME** *REMOTE SENSING OF ENVIRONMENT*  
Sellers, P. J., Berry, J. A., Collatz, G. J., Field, C. B., Hall, F. G.  
1992; 42 (3): 187-216
- **AMMONIUM AND NITRATE UPTAKE IN GAP, GENERALIST AND UNDERSTORY SPECIES OF THE GENUS PIPER** *OECOLOGIA*  
Fredeen, A. L., Field, C. B.  
1992; 92 (2): 207-214
- **A NARROW-WAVEBAND SPECTRAL INDEX THAT TRACKS DIURNAL CHANGES IN PHOTOSYNTHETIC EFFICIENCY** *REMOTE SENSING OF ENVIRONMENT*  
Gamon, J. A., Penuelas, J., Field, C. B.  
1992; 41 (1): 35-44
- **EVIDENCE OF MULTIPLE CIRCADIAN OSCILLATORS IN BEAN-PLANTS** *JOURNAL OF BIOLOGICAL RHYTHMS*  
HENNESSEY, T. L., Field, C. B.  
1992; 7 (2): 105-113
- **RESPONSES OF TERRESTRIAL ECOSYSTEMS TO THE CHANGING ATMOSPHERE - A RESOURCE-BASED APPROACH** *ANNUAL REVIEW OF ECOLOGY AND SYSTEMATICS*  
Field, C. B., Chapin, F. S., Matson, P. A., Mooney, H. A.  
1992; 23: 201-235

- **RESPONSES OF PHOTOSYNTHESIS AND CARBOHYDRATE-PARTITIONING TO LIMITATIONS IN NITROGEN AND WATER AVAILABILITY IN FIELD-GROWN SUNFLOWER** *PLANT CELL AND ENVIRONMENT*  
Fredeen, A. L., Gamon, J. A., Field, C. B.  
1991; 14 (9): 963-970
- **BIOCHEMICAL CORRELATES OF THE CIRCADIAN-RHYTHM IN PHOTOSYNTHESIS IN PHASEOLUS-VULGARIS** *PLANT PHYSIOLOGY*  
Fredeen, A. L., HENNESSEY, T. L., Field, C. B.  
1991; 97 (1): 415-419
- **CIRCADIAN-RHYTHMS IN PHOTOSYNTHESIS - OSCILLATIONS IN CARBON ASSIMILATION AND STOMATAL CONDUCTANCE UNDER CONSTANT CONDITIONS** *PLANT PHYSIOLOGY*  
HENNESSEY, T. L., Field, C. B.  
1991; 96 (3): 831-836
- **LEAF RESPIRATION IN PIPER SPECIES NATIVE TO A MEXICAN RAIN-FOREST** *PHYSIOLOGIA PLANTARUM*  
Fredeen, A. L., Field, C. B.  
1991; 82 (1): 85-92
- **EFFECTS OF LIGHT QUANTITY AND QUALITY AND SOIL-NITROGEN STATUS ON NITRATE REDUCTASE-ACTIVITY IN RAIN-FOREST SPECIES OF THE GENUS PIPER** *OECOLOGIA*  
Fredeen, A. L., Griffin, K., Field, C. B.  
1991; 86 (3): 441-446
- **C in Hawaiian *Metrosideros polymorpha*: a case of internal resistance?** *Oecologia*  
Vitousek, P. M., Field, C. B., Matson, P. A.  
1990; 84 (3): 362-370
- **VARIATION IN FOLIAR DELTA-C-13 IN HAWAIIAN METROSIDEROS-POLYMORPHA - A CASE OF INTERNAL RESISTANCE** *OECOLOGIA*  
Vitousek, P. M., Field, C. B., Matson, P. A.  
1990; 84 (3): 362-370
- **REMOTE-SENSING OF THE XANTHOPHYLL CYCLE AND CHLOROPHYLL FLUORESCENCE IN SUNFLOWER LEAVES AND CANOPIES** *OECOLOGIA*  
Gamon, J. A., Field, C. B., Bilger, W., Bjorkman, O., Fredeen, A. L., Penuelas, J.  
1990; 85 (1): 1-7
- **LOW AND HIGH-TEMPERATURE LIMITS TO PSII - A SURVEY USING TRANS-PARINARIC ACID, DELAYED LIGHT-EMISSION, AND F0 CHLOROPHYLL FLUORESCENCE** *PLANT PHYSIOLOGY*  
Terzaghi, W. B., FORK, D. C., Berry, J. A., Field, C. B.  
1989; 91 (4): 1494-1500
- **THE DEPENDENCE OF PLANT-ROOT - SHOOT RATIOS ON INTERNAL NITROGEN CONCENTRATION** *ANNALS OF BOTANY*  
Levin, S. A., Mooney, H. A., Field, C.  
1989; 64 (1): 71-75
- **RELATIONSHIPS AMONG LEAF CONSTRUCTION COST, LEAF LONGEVITY, AND LIGHT ENVIRONMENT IN RAIN-FOREST PLANTS OF THE GENUS PIPER** *AMERICAN NATURALIST*  
Williams, K., Field, C. B., Mooney, H. A.  
1989; 133 (2): 198-211
- **INTERACTIONS BETWEEN CROWN STRUCTURE AND LIGHT ENVIRONMENT IN 5 RAIN-FOREST PIPER SPECIES** *AMERICAN JOURNAL OF BOTANY*  
Chazdon, R. L., Williams, K., Field, C. B.  
1988; 75 (10): 1459-1471
- **PHOTOGRAPHIC ESTIMATION OF PHOTOSYNTHETICALLY ACTIVE RADIATION - EVALUATION OF A COMPUTERIZED TECHNIQUE** *OECOLOGIA*  
Chazdon, R. L., Field, C. B.  
1987; 73 (4): 525-532
- **DETERMINANTS OF PHOTOSYNTHETIC CAPACITY IN 6 RAIN-FOREST PIPER SPECIES** *OECOLOGIA*

- 
- Chazdon, R. L., Field, C. B.  
1987; 73 (2): 222-230
- **LEAF CARBON ISOTOPE RATIOS OF PLANTS FROM A SUBTROPICAL MONSOON FOREST** *OECOLOGIA*  
Ehleringer, J. R., Lin, Z. F., Field, C. B., Sun, G. C., Kuo, C. Y.  
1987; 72 (1): 109-114
  - **Midday wilting in a tropical pioneer tree** *FUNCTIONAL ECOLOGY*  
Chiariello, N. R., Field, C. B., Mooney, H. A.  
1987; 1 (1): 3-11
  - **PLANT-RESPONSES TO MULTIPLE ENVIRONMENTAL-FACTORS** *BIOSCIENCE*  
Chapin, F. S., Bloom, A. J., Field, C. B., Waring, R. H.  
1987; 37 (1): 49-57
  - **LEAF CARBON ISOTOPE AND MINERAL-COMPOSITION IN SUBTROPICAL PLANTS ALONG AN IRRADIANCE CLINE** *OECOLOGIA*  
Ehleringer, J. R., Field, C. B., Lin, Z. F., Kuo, C. Y.  
1986; 70 (4): 520-526
  - **CONSTRUCTION AND MAINTENANCE COSTS OF MEDITERRANEAN-CLIMATE EVERGREEN AND DECIDUOUS LEAVES .2. BIOCHEMICAL PATHWAY ANALYSIS** *ACTA OECOLOGICA-OECOLOGIA PLANTARUM*  
Merino, J., Field, C., Mooney, H. A.  
1984; 5 (3): 211-229
  - **Compromises between water-use efficiency and nitrogen-use efficiency in five species of California evergreens.** *Oecologia*  
Field, C., Merino, J., Mooney, H. A.  
1983; 60 (3): 384-389
  - **Photosynthetic characteristic of South African sclerophylls.** *Oecologia*  
Mooney, H. A., Field, C., Gulmon, S. L., Rundel, P., Kruger, F. J.  
1983; 58 (3): 398-401
  - **Photosynthetic characteristics of plants of a Californian cool coastal environment.** *Oecologia*  
Mooney, H. A., Field, C., Williams, W. E., Berry, J. A., Björkman, O.  
1983; 57 (1-2): 38-42
  - **Leaf age and seasonal effects on light, water, and nitrogen use efficiency in a California shrub.** *Oecologia*  
Field, C., Mooney, H. A.  
1983; 56 (2-3): 348-355
  - **Allocating leaf nitrogen for the maximization of carbon gain: Leaf age as a control on the allocation program.** *Oecologia*  
Field, C.  
1983; 56 (2-3): 341-347
  - **COMPROMISES BETWEEN WATER-USE EFFICIENCY AND NITROGEN-USE EFFICIENCY IN 5 SPECIES OF CALIFORNIA EVERGREENS** *OECOLOGIA*  
Field, C., Merino, J., Mooney, H. A.  
1983; 60 (3): 384-389
  - **LEAF AGE AND SEASONAL EFFECTS ON LIGHT, WATER, AND NITROGEN USE EFFICIENCY IN A CALIFORNIA SHRUB** *OECOLOGIA*  
Field, C., Mooney, H. A.  
1983; 56 (2-3): 348-355
  - **PHOTOSYNTHETIC CHARACTERISTICS OF PLANTS OF A CALIFORNIAN COOL COASTAL ENVIRONMENT** *OECOLOGIA*  
Mooney, H. A., Field, C., Williams, W. E., Berry, J. A., Bjorkman, O.  
1983; 57 (1-2): 38-42
  - **PHOTOSYNTHETIC CHARACTERISTIC OF SOUTH-AFRICAN SCLEROPHYLLS** *OECOLOGIA*  
Mooney, H. A., Field, C., GULMON, S. L., Rundel, P., Kruger, F. J.  
1983; 58 (3): 398-401

- **ALLOCATING LEAF NITROGEN FOR THE MAXIMIZATION OF CARBON GAIN - LEAF AGE AS A CONTROL ON THE ALLOCATION PROGRAM** *OECOLOGIA*  
Field, C.  
1983; 56 (2-3): 341-347
- **ENVIRONMENTAL CONTROLS ON STOMATAL CONDUCTANCE IN A SHRUB OF THE HUMID TROPICS** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA-BIOLOGICAL SCIENCES*  
Mooney, H. A., Field, C., YANES, C. V., Chu, C.  
1983; 80 (5): 1295-1297
- **Determinants of leaf temperature in California Mimulus species at different altitudes.** *Oecologia*  
Field, C., Chiariello, N., Williams, W. E.  
1982; 55 (3): 414-420
- **PHOTOCONTROL OF THE FUNCTIONAL COUPLING BETWEEN PHOTOSYNTHESIS AND STOMATAL CONDUCTANCE IN THE INTACT LEAF - BLUE-LIGHT AND PAR-DEPENDENT PHOTOSYSTEMS IN GUARD-CELLS** *PLANT PHYSIOLOGY*  
Zeiger, E., Field, C.  
1982; 70 (2): 370-375
- **exchange analysis.** *Oecologia*  
Merino, J., Field, C., Mooney, H. A.  
1982; 53 (2): 208-213
- **DETERMINANTS OF LEAF TEMPERATURE IN CALIFORNIA MIMULUS SPECIES AT DIFFERENT ALTITUDES** *OECOLOGIA*  
Field, C., Chiariello, N., Williams, W. E.  
1982; 55 (3): 414-420
- **CONSTRUCTION AND MAINTENANCE COSTS OF MEDITERRANEAN-CLIMATE EVERGREEN AND DECIDUOUS LEAVES .1. GROWTH AND CO2 EXCHANGE ANALYSIS** *OECOLOGIA*  
Merino, J., Field, C., Mooney, H. A.  
1982; 53 (2): 208-213
- **A PORTABLE SYSTEM FOR MEASURING CARBON-DIOXIDE AND WATER-VAPOR EXCHANGE OF LEAVES** *PLANT CELL AND ENVIRONMENT*  
Field, C., Berry, J. A., Mooney, H. A.  
1982; 5 (2): 179-186
- **Photosynthetic capacity in relation to leaf position in desert versus old-field annuals.** *Oecologia*  
Mooney, H. A., Field, C., Gulmon, S. L., Bazzaz, F. A.  
1981; 50 (1): 109-112
- **PHOTOSYNTHETIC CAPACITY IN RELATION TO LEAF POSITION IN DESERT VERSUS OLD-FIELD ANNUALS** *OECOLOGIA*  
Mooney, H. A., Field, C., GULMON, S. L., Bazzaz, F. A.  
1981; 50 (1): 109-112